

REMARKS/ARGUMENT

The applicants' attorneys appreciate the Examiner's thorough search and remarks.

Responsive to paragraph 1.a of the Office Action, a copy of "Simulating Single-Event Burnout in Vertical Power MOSFETs", IEEE Trans. Electron Devices, Vol. 40, pp. 1001-1008, 1993, is hereby submitted with PTO-1449. Withdrawal of the objection is requested.

Responsive to paragraph 1.b of the Office Action, copies of U.S. Patent Nos. 4,593,302, 5,338,693 and 5,475,252 are hereby submitted with PTO-1449. Withdrawal of the objection is requested.

Responsive to paragraph 1.c of this Office Action, appropriate corrections have been made to the specification. The correction simply replace the short-hand convention for implant dosage with its corresponding long-hand convention as requested in the Office Action. No new matter has been added. Withdrawal of the objection is requested.

Responsive to paragraph 2 of the Office Action, claim 1 has been amended according to the Examiner's suggestions. Withdrawal of the objection is requested.

Responsive to paragraph 4 of the Office Action, claims 4, 5 and 13 have been amended. The amendments simply change the short-hand convention for implant dosage to its corresponding long-hand convention. These amendments do not narrow the scope of claims 4, 5 and 13. Reconsideration is requested.

Responsive to paragraph 6 of the Office Action, appropriate amendments have been made to claims 1 and 7. Reconsideration is requested.

With respect to the rejection of claim 11 for including terminology that lacks antecedent basis, it is respectfully submitted that the base claim for claim 11, namely, claim 1, includes a limitation drawn to a source electrode. See claim 1, line 17. This is the antecedent basis for the term said source electrode in claim 11. Reconsideration is requested.

Claims 1-13 were rejected under 35 U.S.C. §102(b) over Williams, U.S. Patent No. 5,248,627.

Claim 1 includes, among other limitations, a gate electrode "comprised of P-type polysilicon." Regarding claim 1, it was set forth that Williams shows all of the limitations of claim 1 including a gate electrode comprised of P-type polysilicon. As evidence, the Office Action refers to Figs. 6 and 7 of Williams. It is respectfully submitted that Williams does not

show or suggest a gate electrode comprising P-type polysilicon in combination with other limitations of claim 1.

Williams teaches a step of Boron implantation (Fig. 6, Step 92) using the polysilicon gate as a mask. This Boron implantation step does not, however, convert the gate electrode to a P-type polysilicon because it does not have sufficient energy to penetrate the polysilicon.

Williams also teaches a step (Fig. 7, 97) for implantation of Boron ions to form an adjustment layer in the channel region just below the oxide layer. (Col. 6, lines 44-52). This ion implantation step does not convert the gate electrode into a P-type polysilicon because the ions are given sufficient energy to pass through the polysilicon and the oxide layer under the polysilicon. See col. 6, lines 32-33; col. 6, lines 45-47. Thus, Williams does not show or suggest a P-type polysilicon gate electrode in combination with other limitations of claim 1 in that Williams' first ion implantation step (Fig. 6, 92) has too little energy to penetrate the polysilicon layer and Williams' second ion implantation step (Fig. 7, 94) does not result in embedding ions in the polysilicon layer because the ions are given enough energy to pass through the polysilicon layer and its underlying oxide layer. Reconsideration of claim 1 is requested.

Claims 2-13 depend from claim 1, and, therefore, includes at least its limitation. These claims include additional subject matter which in combination with those of claim 1 are not shown or suggested by Williams. Reconsideration of claims 2-13 is requested.

With these amendments, the application is now believed to be in condition for allowance. Such action is earnestly solicited.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Asst. Commissioner for Patents, Washington, D.C. 20231, on October 10, 2001:

Samuel H. Weiner

Name of applicant, assignee or
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Signature

October 10, 2001

Date of Signature

Respectfully submitted,

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